


## Slide 1

Computer Programs and Programming Languages

- What is a **computer program**?
  - Series of instructions that directs computer to perform tasks
    - **Programming language**—used to communicate instructions



p. 664 Fig. 13-1

## Slide 2

Computer Programs and Programming Languages

- What are low-level languages and high-level languages?

**Low-level language**

- Machine-dependent
- runs only on one type of computer
- Machine and assembly languages are low-level

**High-level language**

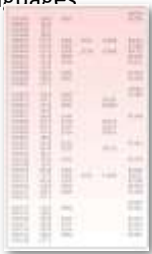
- Often machine-independent
- can run on many different types of computers and operating systems

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## Slide 3

Low-Level Languages

- What is **machine language**?
  - Only language computer directly recognizes
  - Uses a series of binary digits (1s and 0s) with a combination of numbers and letters that represent binary digits




p. 665 Fig. 13-2

## Slide 4

### Low-Level Languages

- What is **assembly language**?
  - Instructions made up of symbolic instruction codes, meaningful abbreviations and codes
  - **Source program** contains code to be converted to machine language



p. 686 Fig. 13.3

## Slide 5

### Procedural Languages

- What is a **procedural language**?

Programmer writes instructions that tell computer what to accomplish and how to do it

Uses series of English-like words to write instructions

Often called **third-generation language (3GL)**

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## Slide 6

### Third Generation Languages

- **Early**
  - Fortran
  - Cobol
- **Today**
  - C
  - C++
  - C#
  - Python
  - Java


p. 687 Fig. 13.4

## Slide 7

### Web-based Software

What is a **Web application**?

- A software application that obtains information from the Web
  - Some Web applications store your data and information at their site
  - Some are free




p. 163 Figs. 3-43

## Slide 8

### Web-based Software

What is Web 2.0?

- Web sites that offer Web-based software
- Provide users with a means to share and/or store personal information through Web-based software



What is Web 2.0?  
 Chapter 3, Slide 8  
 Web 2.0  
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## Slide 9

### Web-based Software

What is an **application service provider (ASP)**?

Third-party organization  
 that manages and  
 distributes software  
 and services  
 on the Web

Allows companies  
 to outsource  
 information  
 technology (IT)  
 needs

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## Slide 10

### Web Page Development

- What is **dynamic HTML (DHTML)**?
  - Allows developers to include more graphical interest and interactivity in Web page



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p. 682 Fig. 13-21

## Slide 11

### Web Page Development

- What are **XHTML**, **XML**, and **WML**?
 

<b>XHTML</b> (Extensible HTML) enables Web sites to be displayed more easily on microbrowsers	Includes features of HTML and XML
<b>XML</b> (Extensible Markup Language) allows developers to create customized tags	Server sends entire record to client, enabling client to do much of processing without going back to server
<b>WML</b> (Wireless Markup Language) allows developers to design pages specifically for microbrowsers	Many Internet-enabled smart phones and PDAs use WML as their markup language

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## Slide 12

### Web Page Development

- What is **Ajax**?
  - Stands for Asynchronous JavaScript and XML
  - Method of creating interactive Web applications designed to provide immediate response
  - Combines JavaScript, HTML or XHTML, XML, and cascading style sheets
  - Google Maps and Flickr use Ajax

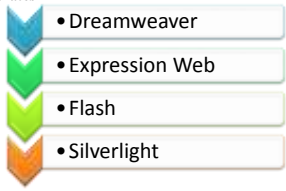
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## Slide 13

### Web Page Development

- What is **Web page authoring software**?
  - Creates sophisticated Web pages without using HTML
  - Generates HTML



- Dreamweaver
- Expression Web
- Flash
- Silverlight

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## Slide 14

### Multimedia Program Development

- What is **multimedia authoring software**?
  - Combines text, graphics, animation, audio, and video into interactive presentation
  - Used for computer-based training (CBT) and Web-based training (WBT)



- Software includes **Toolbook**, and **Director**

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p. 684 Fig. 13-22